INFORMATION ALLEY

Support News

April 17, 1995

Volume I, Issue 25

"Get Off the Highway and Into the Alley™"

In This Issue...

A bi-weekly publication of Apple Computer, Inc. – Customer Services Division

Inside Information...

About the *Information Alley*

The ***Information Alley*** ™ is a publication of Apple Computer, Inc., Support Information Services. The goal of the ***Information Alley*** is to help you get full use of your Apple computers, peripherals, and software. We make every attempt to include articles that have the broadest audience possible. However, we do sometimes print articles that do not apply to our international readers.

Where to Find the *Information Alley*

The ***Information Alley*** is available through a variety of online services and Internet list server capability. For a complete list of where to find the ***Information Alley***, call the Apple Fax line at 1-800-505-0171 and request document #20720. You can also get an index to back issues by requesting document #20719. Optionally, you can search the Technical Information Library; use "information alley" as the search string. Select article title ***Information Alley: Online Services it is Posted To*** or article title ***Information Alley: Index of Past Issues***.

Submissions and Letters

We welcome articles that help Apple computer users become more knowledgeable about the functionality of their systems, explain or illustrate complex features or functions, or that describe technical tips or techniques.

Send submissions to:

Information Alley
Apple Computer
1200 East Anderson Lane
MS 212-STI
Austin, TX 78752

Fax: (512) 908-8018
e-mail: alley@apple.com

We welcome letters to the editor and suggestions for future articles. Please do not send us your support questions.

Copyright Notice

This newsmagazine is copyrighted, with all rights reserved. Individual articles in this newsmagazine may be reprinted, in their entirety, without prior written permission from Apple as long as full credit is given to Apple Computer and the ***Information Alley*** is listed as the source of the information.

You must have prior written permission from Apple Computer to excerpt or paraphrase portions of articles from this newsmagazine. For permission, contact: Janet Christian, Editor or call (512) 908-8975.

Trademarks

The Apple logo is a trademark of Apple Computer, Inc., registered in the U.S. and other countries.

Apple, the Apple logo, APDA, AppleLink, AppleShare, AppleTalk, A/UX, EtherTalk, HyperCard, HyperTalk, ImageWriter, LaserWriter, LocalTalk, Macintosh, and ProDOS are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.

Apple Desktop Bus, Balloon Help, Disk First Aid, Finder, SuperDrive,

Information Alley, "Get off the Highway and Into the Alley", and TrueType are trademarks of Apple Computer, Inc.

Classic is a registered trademark licensed to Apple Computer, Inc.

AppleCare is a service mark of Apple Computer, Inc., registered in the U.S. and other countries.

All other products mentioned in this newsmagazine are trademarks of their respective companies. Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Apple assumes no responsibility with regard to the performance of these products.

Apple Computer, Inc., products (hardware and software) described in this newsmagazine are subject to update and change. This newsmagazine makes no assurance that functions and technical information described here is not superceded by subsequent releases of the product described.

The ***Information Alley*** is produced using FrameMaker 4.0 on a Power Macintosh running System 7.5.

One Year Already!

By Janet Christian

It's hard to believe that this issue marks the completion of one year for the *Information Alley*. Volume I, Issue 1 was published on May 1, 1994. Throughout the past year, we have continuously made modifications to improve and streamline the magazine.

We hope that you have found a lot of useful information in your first year "off the highway and in the alley." We hope you find Volume II just as interesting and worthwhile.

PostScript Error in Acrobat Version of Issue 24

We received reports that several of you had difficulty printing beyond page 8 of Volume I, Issue 24. We performed tests ourselves and found that there was, indeed, a problem in this issue. We have recreated and re-uploaded Issue 24 to eWorld, AppleLink, the World Wide Web server, CompuServe, America Online, the Internet, and the List Server. We apologize for any inconvenience this may have caused.

Acrobat Printing Tip

We've received several comments from customers that there are no page numbers on the *Information Alley* when it is printed from Adobe Acrobat. Acrobat crops the pages a bit more than the average 1/4 inch. To ensure that your page numbers print, click on the Shrink to Fit box in the Adobe Acrobat print dialog box. This shrinks your pages only slightly, so the quality and readability are not affected, but you do get your page numbers at the top of every page.

Apple Software Updates

Due to time constraints, the new feature listing all recently released Apple software updates did not make it into this issue. However, watch for it in the next issue. In the meantime, you can find out all about Apple software updates in these Technical Information Library articles:

- Where to Find Apple Software Updates
- Apple Software Updates Online: Structure List
- Apple Software Updates Online: Alphabetical List
- What's New on Apple Software Updates.

Apple Offers Direct Online Support via eWorld

By Charlie McCabe

Beginning today (April 17, 1995), Apple is rolling out **Ask Apple** – direct online support for Apple products offered exclusively in the company's online service, eWorld. This means that you can now post a technical question in eWorld and get an official response from Apple support professionals by the next business day – at no extra fee.

This one-step access to professional support is convenient and affordable. Because eWorld offers new subscribers ten free hours of use during their first month online, new Macintosh users can receive ten hours of free online support from Apple during their first weeks with their new computer. After the first ten hours, **Ask Apple** support is included in the standard eWorld monthly fee, at no extra charge. eWorld comes bundled on every Macintosh sold in the U.S. (and an increasing number of international systems).

Apple provides the online support, in addition to a large array of customer support services, through the Apple Customer Center in the eWorld Computer Center. The new area, **Ask Apple, USA** is a discussion-board-style forum that is staffed by the same people who answer your telephone queries on the company's customer support hot lines. In **Ask Apple**, customers in the U.S. can post questions to Apple support representatives and receive an official answer from Apple by the next business day. Ask Apple is currently available only for Apple's U.S.-based customers, however, support for international customers is expected soon.

Apple's customer support online strategy is designed to offer you more support options so you can get quick answers to your technical questions, rapid access to technical and support data libraries, keep up-to-date on the newest product announcements from Apple, and easily access software and utility updates. Currently, Apple publishes support information on Compuserve, AppleLink, and the Internet. However, the company provides online direct support exclusively in eWorld.

eWorld's Apple Customer Center is the best place for you to get the most out of your Macintosh, Newton, or Workgroup Server. The Apple Customer Center comprises the following sections:

- Apple Products & Technologies

  Offers product information and data sheets as well as discussion boards for customer-to-customer interaction about Apple products

- Apple Technical Support

  A forum where customers can search and download technical support information and post their technical support questions

...Continued from previous page

- Apple News & Resources

  A library of press releases and background information about Apple and its products

- Apple Developer Services

  A forum for Macintosh and Newton product developers

- Talk Back: Customer Forum

  A bulletin board forum where customers can talk to each other about product and technical issues

- Apple Cafe

  Live discussions and exchange of opinions with other Apple users and participate in dynamic, live conferences with guests from Apple

eWorld is a powerful, yet easy-to-use, global family of online services from Apple Computer, Inc., which includes eWorld for Macintosh and NewtonMail – eWorld's messaging service for Newton personal digital assistants. Included on most Apple Macintosh computers, the software is also available free to all U.S. Macintosh users by calling 1-800-775-4556. A windows-based version of eWorld is expected to be available in 1995.

Workgroup Server 95 – Cache Optimization

By Antonio Ordonez and Ulan King

The following is a basic formula for optimizing the cache memory on an Apple Workgroup Server (AWS) 95.

Formula

Buffer cache = Z – VM

| Element	Description
Z	Total Ram – X Where X = (Kernel=5 MB) + (CatsearchD=1 MB for every 10,000 files)
VM	Retrospect + System Software + AppleShare Caches + Print Server + any other Mac software

Important: These calculations assume no other UNIX processes are being started besides the ones started in the system by default. If this is not the case, add the memory requirements for those processes to the calculation of X.

Note: Make sure Z is greater than or equal to Buffer Cache + VM.

The Difference Between Format and Initialize

By Bob Wambaugh

The terms format and initialization are often used interchangeably. Formatting is a process that prepares a disk for storing information. Formatting can be low-level which prepares a disk by dividing it into tracks and sectors where information can be stored or high-level where only a directory is created.
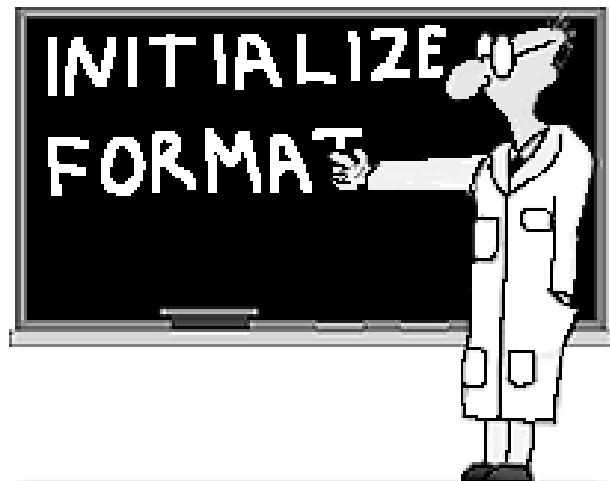
Low-Level Formatting

Low-level formatting is also commonly referred to as simply formatting. During formatting, sector addresses, byte gaps, sync gaps, drivers, and partitions are created on the disk.

High-Level Formatting

High-level formatting, commonly referred to as initialization, creates a directory but does not write any sector information on to the hard drive.

This can get confusing because drive utilities vary greatly in the way they handle initialization and formatting. Apple HD SC Setup, for example, performs both initialization and formatting in the same operation while other utilities, such as SiliverLining, Norton Utilities, and FWB Hard Disk Toolkit separate initialization and formatting into two distinct operations.

The Erase Disk command from the Mac OS Finder can perform both a low-level format and a high-level format if the disk is a floppy disk. On hard drives, Erase Disk can only do a high-level format.

Tips and Tidbits

Monitors Control Panel

Click the version number in the control panel window. A box pops up with the names of the people who wrote Monitors. While you hold down the mouse button, tap the **Option** key; this makes the smiley face stick out its tongue. After tapping **Option** several times, the names begin to get rearranged and some first and last names get replaced with "Blue" or "Meanies". [From the ***Macintosh/Newton Easter Egg List*** compiled by Brian Kendig. Contributed by Steve Noskowicz.]

RMS, Peak-to-Peak, and Line Level Definitions

By Terry Carter

This article provides questions and answers concerning microphones and definitions related to them.

Q: I am looking for information about audio input and output voltages to different Macintosh computers. Some specifications show the value in "Peak-to-Peak" while others are in "RMS" and I have also heard of a term "Line Level". What do these terms mean?

A: Peak-to-Peak and RMS are ways of measuring the voltage of an audio or AC signal. Line Level is an industry standard used in audio equipment.

Q: Are Peak-to-Peak and RMS the same thing? Can the terms be used interchangeably?

A: No. Peak-to-Peak is the measurement of any signal from the positive most peak to its negative most peak, in other words, its extremes. RMS stands for Root Means Square and it is the value of a signal's "Effective Value" or the work it can do.

Q: How do I convert from one to the other?

A: There are two simple equations that you can use based on the assumption that the signal is a "sine wave". They are:

To Find	Equation
Peak-to-Peak	RMS * 2.828
RMS	Peak-to-Peak * 0.3535

- RMS is defined first by the "means" of the "square" (^2) of every angle through a given wave. With sine waves the mean is 0.707, which is 1 divided by the square root of 2. Therefore, the (1/SQRT 2) is the root means of the squares of all the angles.

- The RMS of one half of a sine wave is 70.7% of the peak value or [Peak * 0.707 = RMS].

- The Peak value of a sine wave is 1/2 of the Peak-to-Peak value.

Q: What is the voltage rating of "Line Level" in, RMS or Peak-to-Peak?

A: Line Level has no voltage standard. It is actually an impedance or "Signal Resistance" value set at 47,000 Ohms. There is no way of converting this information alone into any voltage specification.

Line Level provides an industry standard so that all audio and other electronic equipment can operate properly together. Most VCRs, including both home and professional audio equipment use Line Level as a standard. They are commonly used where you find an "RCA" connector. The RCA plug looks similar to a 4 leafed flower with a center single conductor pole. The RCA jack usually sticks out about 1/4-in. from the chassis and is about 1/4-in. around with a 1/8-in. center hole.

Q: How do I convert my microphone signal to a Line Level signal?

A: The easiest way is to use any home audio equipment that accepts microphone inputs. Tape recorders, audio tuners, audio mixers, and video cameras are all common equipment that usually provide a microphone input.

Apple Workgroup Server and A/UX Not Booting

From the Technical Information Library

When an A/UX system is configured to be a Yellow Pages client, it tries to connect to a Yellow Pages server during the boot process. If it cannot find a server, it displays the message **yp: server not responding** and the system waits until one becomes available.

One way to disable Yellow Pages is from the startup shell, by typing:

> **mv /etc/ypbind /etc/ypbind.hold**

Then continue to boot normally. Once you have booted, we suggest that you turn off Yellow Pages in **/etc/inittab** and move the file back to the original location. To turn off Yellow Pages, find the line that executes **ypbind** and set it to **off**.

Another way is to edit the file **/etc/inittab**, using the **ed** editor from the A/UX Startup application.

Here is the process:

STEP	ACTION
1	Launch A/UX Startup and click **Cancel** as it begins to launch A/UX
2	At the **startup#** prompt, type: **ed /etc/inittab**
3	Use standard **ed** editing commands to change the line: **nfs2:2:wait:/etc/ypbindto:nfs2:2:off:/etc/ypbind**

Note: For help with the ed editor, read the manual, *A/UX Text Editing Tools*.

QuickDraw GX – PostScript Font Handling Tips

By Anthony Snyder

Using QuickDraw GX with PostScript fonts and applications that manipulate PostScript font data can sometimes lead into some compatibility issues. First, QuickDraw GX is a new, emerging technology that not all applications can take advantage of. This article describes some procedures that let you keep QuickDraw GX installed and still use applications that do not support QuickDraw GX.

Background

The following is a simplified explanation of fonts. See *Font Facts* in **Information Alley** Volume I, Issue 3 for further information on how fonts are handled on the Macintosh.

To understand how QuickDraw GX handles PostScript fonts, it is first necessary to understand how System 7, without QuickDraw GX, handles PostScript fonts. Under System 7.5, fonts are stored in the fonts folder. There are three types of fonts supported by the Mac OS:

- Bitmap
- TrueType
- PostScript

Bitmap and TrueType fonts are stored in the Fonts folder inside the System Folder. A bitmap file has a single letter **A** on the icon, a TrueType file has three successively smaller letter **A**s on the icon. PostScript fonts consist of two or more files per font – a suitcase file that contains bitmaps and a printer outline font file.

To determine what type of font you are looking at, when in the Fonts folder, select **View by Kind** from the View menu. Use the same procedure to determine the type of font contained within a font suitcase. Open the suitcase and select **View by Name** from the View menu.

Installing QuickDraw GX and Enabling PostScript Fonts

QuickDraw GX brings to PostScript fonts the same benefit TrueType has had for years – the ability to store the printer font data in the font suitcase along with the bitmap data for a PostScript font.

Continued on next page...

The benefits are:

- Less confusion about what files go with what font since the PostScript Font files (printer fonts) are no longer needed

- Consistent way of handling all fonts whether they are TrueType or PostScript

Using QuickDraw GX, you can open a suitcase and see the (printer) outline portion of the font (either TrueType or PostScript) and the bitmap portion of the font. To have this ability, QuickDraw GX must first enable the PostScript font. Enabling involves combining the bitmap and printer font files into a font suitcase.

The QuickDraw GX installer enables all PostScript fonts installed in the Fonts folder. Copies of the unmodified fonts (both suitcases and printer font files) are placed in a folder called •**Archived Type 1 Fonts**• inside the System Folder. The installer does not delete any fonts.

Tip #1

If you use a lot of PostScript fonts, use the QuickDraw GX customize option and install the QuickDraw GX utilities. This provides you with the latest version of the LaserWriter Utility, QuickDraw GX helper, and the Type 1 Enabler application. The Type 1 Enabler application should be used to convert any PostScript fonts you add to the system after installing QuickDraw GX. It performs the same operation as the QuickDraw GX installer, combining bitmap and PostScript font files into a font suitcase.

Using Your PostScript Fonts and the GX Helper

Most of the QuickDraw-compatible applications work fine with QuickDraw GX and PostScript fonts. QuickDraw GX comes with printer drivers for most Apple printers. QuickDraw GX printer drivers check if applications support QuickDraw GX, and revert back to older QuickDraw printer features (usually referred to as compatibility mode), if applications do not support QuickDraw GX.

The programs that could take advantage of QuickDraw GX fonts, such as PageMaker, Quark XPress, Illustrator, Freehand, and FrameMaker, are not QuickDraw GX compatible yet, and often do not work in the compatibility mode. You should check with the application's vendor for QuickDraw GX compatibility information.

When using these applications with QuickDraw GX on, you get messages like "You will be unable to print since no outline fonts are present" and "Font Mismatch Helveobl..." and "No PostScript fonts are present" along with other miscellaneous messages. Usually these are applications that manipulate PostScript data (especially font data). The applications are not QuickDraw GX compatible and usually either come with their own printer drivers or make assumptions about where font data is stored (believing that PostScript fonts are still kept in separate files).

Tip #2

Use the QuickDraw GX Helper extension, installed by the Customize option in the QuickDraw GX installer, to print from non-GX compatible applications. QuickDraw

GX Helper is a system extension that lets you disable QuickDraw GX desktop printing. It gives you the option to select what type of printing to use from the Apple menu. The setting is preserved by applications and is stored in the QuickDraw GX Helper preferences file in the Preferences folder.

When desktop printers are inactive, the Mac OS does not use the QuickDraw GX print driver. All printing calls are routed to the non-QuickDraw GX print driver. The non-QuickDraw GX print driver acts as if QuickDraw GX is not installed, and looks for PostScript printer outline fonts files in their previous location. The printer driver is not aware of QuickDraw GX enabled font suitcases.

Tip #3

QuickDraw GX Helper uses a non-GX printer driver, so you must re-install the PostScript font files into the Fonts folder. These are listed in the Finder as PostScript Font when you view the files by kind. This is necessary because the older printer drivers have not been updated to support the QuickDraw GX font suitcase format (created by the GX installer) that places PostScript fonts in a suitcase.

Both the PostScript font file and the new QuickDraw GX compatible suitcases can be present in the Fonts folder at the same time, and there are no performance problems, however extra disk space is required for the duplicate fonts.

You can find the original PostScript font files in either the •**Archived Type 1 Fonts**• folder in the System Folder, or on the original fonts disk. Do **NOT** copy suitcase files from the archived folder, or from fonts disks to the fonts folder – this removes the enabled fonts required when QuickDraw GX helper is not being used. Use the Type 1 enabler application to enable and install fonts.

Tip #4

If you are using a non-Apple printer, do not use Apple print drivers. You need to contact the manufacturer to obtain a QuickDraw GX compatible driver. There are no workarounds to use the older QuickDraw print driver unless you turn off QuickDraw GX.

Turning QuickDraw GX Off and using PostScript Fonts

If you have an application that does not work even with GX Helper, or have decided to wait until your applications are QuickDraw GX compatible and you turn off QuickDraw GX, you have problems using your PostScript fonts. Without QuickDraw GX, the non-QuickDraw GX Printer drivers cannot find the PostScript font data inside the enabled suitcases.

Tip #5

If you are sure you will not be using QuickDraw GX again, use the remove option in the QuickDraw GX installer to remove QuickDraw GX. The removal process cannot un-enable PostScript fonts. Copy the PostScript fonts and the other fonts files from the •**Archived Type 1 Fonts**• folder in the System folder or from the original fonts disk. Reinstall the fonts in their prior format – a font suitcase of the bitmaps and a separate PostScript font (outline) file.

System Error 25 Explained

By Doug Korns

The Situation

Your system crashes into MacsBug and each time, you are dumped into the same routine. The current instructions look like this:

System Error 25 at 408314A _Jackson

_Jackson

  +0000 408314A *Debugger

  +0002 408314C _NewHandle, Immed

  +0004 408314E BNE.S _DisposeCIcon+0032

What is Happening

What you are running into is not debug code. The area of code you are seeing here is in the Macintosh ROM.

The label **_Jackson** is an abbreviated label for **_JacksonPollack**. Jackson Pollack was the development name for Color QuickDraw project and this area of ROM contains routines of Color QuickDraw.

A System Error 25 is a stack and heap collision detection. The Mac OS registers a routine to run on a periodic basis to check for the stack and heap overrunning each other. When the periodic routine runs, it checks two pointers that indicate the boundaries of the heap and stack. If, while the Vertical Blanking (VBL) task is running, it finds the bottom of the stack to be less than the top of the heap, an error 25 is reflected. If it was not for the routing checking performed by the periodic routine, this error could go undetected.

Note: See **Vertical Blanking** at the end of this article for more information about VBL.

If MacsBug is installed, these error 25 problems usually show up in MacsBug as being at the **_Jackson** entry point. Without Macsbug installed, you may get a **System Error 25** message or the "bomb" dialog box containing the **Restart** button.

The meaning of System Error 25 is often listed as "out of memory." It is usually an indication that the stack has temporarily overrun the heap and the computer should be restarted. The error might be eliminated by increasing the application's partition size (memory allocation) in the Get Info window to allow for more heap and stack space for that application. It could also be that the application is being driven into some improper calling sequence that causes the stack to grow until it overlaps the heap. If this is the case, you would need to contact the vendor of that application for further information about their software.

...Continued from previous page

Vertical Blanking

VBL refers to Vertical Blanking. The Macintosh video circuitry generates a vertical retrace interrupt (also known as the vertical blanking interrupt) 60 times a second when the beam of the display tube returns from the bottom of the screen to the top of the screen. This interrupt can be used to schedule periodic or recurrent tasks.

The vertical Retrace Manager of the Mac OS defines an Application Program Interface (API) to install or remove a routine that is to be executed during these interrupts. The Mac OS registers (installs) several Vertical Blanking (VBL) tasks to manage activities. Examples of System VBL tasks are:

- Increment the number of ticks (1/60 of a second) since system startup time.

- Check whether the stack has expanded into the heap.

- Handle cursor movement.

- Recognize a change in state of mouse button up or mouse button down.

- Recognize that a floppy disk has been inserted.

- Reset the keyboard if its is reattached.

Applications can also install VBL tasks that exist while it is running or are persistent in the System after its termination. 🍎

Why the PowerBook Battery DA Level Fluctuates

From the Technical Information Library

When using the Battery Desk Accessory (DA) on a Macintosh Powerbook computer, you may notice that when you connect or disconnect the AC Adapter, the battery level indicators fluctuate slightly. In other words, the charge indicated on the Battery DA fluctuates slightly when AC power is applied or removed. This is related to the load placed on the battery.

When AC power is available, the load of the charging battery and the PowerBook itself is transferred to the power adapter, so the Battery DA indicates a slightly higher battery level.

Once the AC adapter is removed and the full load of the PowerBook is transferred to the battery, the level will drop slightly to indicate this increased load. 🍎
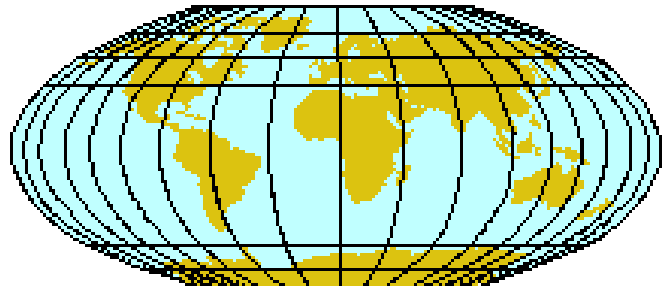
Apple MessagePad – International Dialing Using Names

By Seth Willis and Brian Schussler

This article describes how to dial international numbers on the Apple MessagePad using the Names application.

This tip makes international dialing using the Names application easier, especially if you travel outside your own country.

For example purposes, assume that you are located in Austin, Texas and that you want to call someone in the Apple office in Oslo, Norway.

Dialing Steps

STEP	ACTION
1	Tap on **Extras**, then **Time Zones**. If the "I'm here" location does not match the country you are in, set your location as explained in the ***Apple MessagePad User's Manual***. Use the nearest large city if your city is not listed in the Newton. Since you are located in Austin Texas, your MessagePad is set to Dallas, TX.
2	Tap on **Extras**, **Prefs**, and **Personal**, and set your country. Assume you have selected **USA** from the pop-up list. (If your country appears in the pop-up list, select it from the pop-up, rather than writing it in.)
3	In the Names application, go to the **Show All Info** view.
4	Enter the country's name on the card, even if it does not appear in the pop-up list. Assume you select **Norway** from the pop-up list.
5	Enter the phone number as you would dial it while in that country. Assume you entered **259 1800**.
6	Go to **Show Card** or **Show Card & Notes** and tap twice on the phone number.

This brings up the Call Slip. The phone number should appear with the correct international dialing codes. In this example, your Newton shows **011 47 2591800**.

If you traveled to Norway you would set your **Time Zone** to **Oslo**, and your **Personal Prefs** to **Norway**. Tapping twice on the number again from within the Names application produces a Call Slip with **259 1800**.

Installing CloseView on a Macintosh Performa

By Bob Wambaugh and Seth Willis

CloseView is not installed in the Control Panels of the active System Folder on Macintosh Performa computers. It is included in the Apple Extras folder on the hard drive.

Installation of CloseView is easy from within the Finder. There is no installer, so you can just drag the CloseView icon on top of your System Folder. If you are using At Ease, you need to go to the Finder before you can install CloseView.

Installing CloseView

STEP	ACTION
1	Open the hard drive.
2	Open the folder called **Apple Extras**.
3	Click on the **CloseView** icon and hold the mouse button down.
4	Drag the **CloseView** icon on top of the System Folder and release the mouse button.
5	An alert box appears telling you that CloseView will be placed in Control Panels. Click the **OK** button.
6	Pull down the Apple Menu and open **Control Panels**.
7	Open the CloseView control panel and make the necessary changes to turn on and configure CloseView the way you want it.
8	Close the CloseView control panel.

Installation is the same for System 7.5 and other Performa computers assuming that you are working within the Finder.

New Places to Find the *Information Alley*

You can now find the **Information Alley** on these online services and BBSs:

• Simm City BBS (Wilton, New York) – (518) 587-6311

A First Class BBS with a modem speed of 28.8 bps. Logon with your user name.

The Apple LocalTalk Bridge

By Fred Widmer

The Apple LocalTalk Bridge lets you extend the networking reach of your current Macintosh system, whether you are running an Ethernet network or a Token Ring only network. By effectively uniting two different networks, the Apple LocalTalk Bridge provides an inexpensive software solution that creates a single virtual network – eliminating the need to install a router or repeatedly switch network connections.
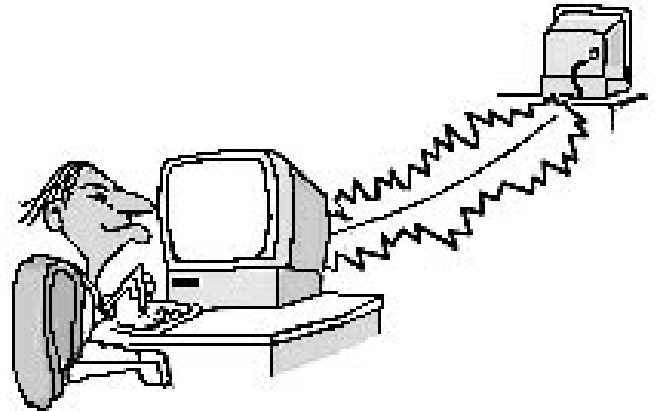
The Apple LocalTalk Bridge is a control panel that bridges a LocalTalk network to another network selected from the Network control panel. This simple and effective solution lets you upgrade some, or all, of your Macintosh computers to a higher-speed network (for example, Ethernet or Token Ring) while maintaining the ability to print to LocalTalk-only LaserWriter printers or share files with PowerBook computers that lack high-speed network capabilities. Similarly, if you have an Ethernet or Token Ring only network, the LocalTalk Bridge provides a convenient way for your LocalTalk-only PowerBook computer or Newton MessagePad communications device to gain access to network services.

Designed with the end user in mind, the LocalTalk Bridge features dynamic, user-selectable access modes. When access is set to **Private**, the LocalTalk devices and services—such as LaserWriter printers and shared Macintosh volumes—are hidden from users on the Ethernet or Token Ring network, while LocalTalk-only devices retain full access to the services on both sides of the network. In contrast, when access is set to **Public**, all devices are visible from both sides of the network.

Used in conjunction with the Apple Ethernet 10T/5 Hub and the appropriate media adapters, network cards, or connectors, the Apple LocalTalk Bridge can provide a complete upgrade to an integrated Ethernet or Token Ring and LocalTalk network without the high degree of cost and complexity normally associated with bridging or routing different networks. So if you want to upgrade or simply extend the network access of your current system—but do not want to spend a lot of time and money in the process—the Apple LocalTalk Bridge is the answer.

Features

Ease of use

- Offers easy installation.
- Configures simply; just run the installation program and restart the computer.
- Eliminates the need to switch network connections whenever you want to print.

- Eliminates the need to set network numbers.

Flexibility

- Preserves your investment in LocalTalk printers and computers.
- Makes it easy to upgrade your LocalTalk network to Ethernet or Token Ring.
- Lets users connect to and use LocalTalk-only devices such as some LaserWriter printers, PowerBook notebook computers, or Newton MessagePad communications devices from an Ethernet or Token Ring network.
- Lets you access file servers, email, host-based systems, and databases on an Ethernet or Token Ring network while maintaining a seamless connection to your LocalTalk network.
- Supports multiple LocalTalk devices, up to 32 per bridged twisted-pair segment, however 20 are recommended when the bridge is also being used as a workstation.

Compatibility

- Works with all Macintosh computers running System 7 or later software that are equipped with a LocalTalk connection and one other network (Ethernet, Token Ring, or Infrared) connection.
- Is compatible with Apple Internet Router 3.0.1 networks, Apple Remote Access, MacTCP, and the Apple IP Gateway.

Security

Features a **Private** mode that lets users determine whether to allow non-LocalTalk users access to their LocalTalk segments.

Convenience

- Offers dynamic On/Off capabilities that let users maintain separate networks without having to restart.
- Makes it easy to create, expand, administer, and troubleshoot your network.
- Provides affordable plug-and-play LocalTalk to Ethernet or Token Ring network connection.

General Troubleshooting

The bridge computer becomes unresponsive

Each time a LocalTalk device starts up, the Bridge obtains an address (node ID) from the Ethernet or Token Ring network, and assigns that address to the LocalTalk device in order to make the device visible on the extended network. The bridge computer might become unresponsive (it could "hang" or "freeze") if it is unable to acquire the node ID. To fix this problem, the network administrator needs to reconfigure the router to make more node IDs available for the Ethernet or Token Ring segment on which the Bridge is running.

The bridge computer cannot access Token Ring zones

If you install the Apple Internet Router and the Apple LocalTalk Bridge on the same computer, and both are running simultaneously, the bridge computer won't have access to Token Ring zones. To remedy this problem, remove either the router or the Bridge.

Error Messages

Macintosh printer port already in use

During startup, there are three ways in which the bridge computer's printer (or serial) port can be in use:

• You set the current AppleTalk port to LocalTalk in the Network control panel.

• You selected EtherTalk or TokenTalk in the Network control panel, but an error occurred while switching to the selected network, so the bridge computer used the default AppleTalk port (LocalTalk) instead.

• You installed a software product that reserves the printer (or serial) port before the LocalTalk Bridge is activated.

In order for the LocalTalk Bridge to work, you need to select either EtherTalk (if the bridge computer is connected to an Ethernet network) or TokenTalk (if the bridge computer is connected to a Token Ring network) in the Network control panel. If you installed software that reserves the printer (or serial) port, you need to deactivate the conflicting software in order for the LocalTalk Bridge to run.

LocalTalk Bridge cannot start because the printer port is in use

Please select another AppleTalk connection in the Network control panel, then try again. The printer port automatically uses LocalTalk Built-In as the network connection. To use the LocalTalk Bridge, you need to select either EtherTalk (if the bridge computer is connected to an Ethernet network) or TokenTalk (if the bridge computer is connected to a Token Ring network) in the Network control panel.

LocalTalk Bridge cannot start because AppleTalk is not active

Please use the Chooser to activate AppleTalk, then restart the Macintosh. AppleTalk must be active on the bridge computer. You turn AppleTalk on by opening the Chooser and clicking the **AppleTalk Active** button to select it. You may need to restart your computer for the change to take effect.

LocalTalk Bridge requires AppleTalk version 58 or later

Please install AppleTalk version 58 or later, then try again. The LocalTalk Bridge requires AppleTalk version 58.1.5 or greater to function. Reinstalling system software or installing a third-party card (with its accompanying driver software) might also install a version of AppleTalk that is too old for the LocalTalk Bridge. To remedy this problem, reinstall the LocalTalk Bridge software, using the Installer on the Apple LocalTalk Bridge floppy disk.

...Continued from previous page

LocalTalk Bridge cannot continue because of a network number conflict

Please restart the Macintosh. The non-LocalTalk network (Ethernet or Token Ring) can have one or more active routers, and additional routers might become active on the network after the LocalTalk Bridge is turned on. The additional routers might cause the network number conflict. If restarting the bridge computer does not fix the problem, contact your network administrator; the remedy may involve network reconfiguration.

LocalTalk Bridge cannot start because of an AppleTalk error

AppleTalk errors are rare, but may be caused by file or resource corruption. Check that network cables are securely attached and that all devices are properly terminated. If the problem persists, you may need to reinstall system software, then reinstall the LocalTalk Bridge.

LocalTalk Bridge could not obtain a LocalTalk address because all addresses are in use by other network devices

Please contact your network administrator. Try restarting the bridge computer. If restarting does not remedy the problem, contact your network administrator. The remedy may involve reconfiguring the network.

LocalTalk Bridge was unable to start because of an unspecified error

This message occurs if you install the LocalTalk Bridge on a 68000-based Macintosh. The LocalTalk Bridge requires at least a 68020 processor.

Making AppleTalk inactive or switching network connections has stopped LocalTalk Bridge services

Open the Chooser and turn **AppleTalk** on, then restart the bridge computer.

There is a router or a Macintosh running LocalTalk Bridge software on this LocalTalk network

LocalTalk Bridge cannot run on a LocalTalk network that has a router or another LocalTalk Bridge. You can only use the LocalTalk Bridge on a LocalTalk segment that does not already have an active AppleTalk Internet Router, LaserWriter Bridge, or LocalTalk Bridge. If the LocalTalk Bridge software detects a router or another Bridge on the LocalTalk segment, the LocalTalk Bridge will not start up. This error message also occurs if you install the LocalTalk Bridge on a computer that also has a router installed. In order for the LocalTalk Bridge to run, you need to remove the router software, then reinstall the LocalTalk Bridge.

There is not enough memory available to start LocalTalk Bridge

The LocalTalk Bridge driver requires approximately 70K of RAM to run. You can try removing unnecessary system extensions (programs that start automatically when the computer is turned on) or installing more memory. 🍎

Tell Us What You Think

Tell us what you think of the **Information Alley**. We want it to be as useful for you as possible. Your feedback will help us reach this goal. Please fill out this form and fax, mail, or e-mail it to the address at the bottom of this page.

Content

Were the articles interesting and informative?   YES   NO   If NO, please explain:

_____

How was the technical depth of the articles?   NOT ENOUGH   ABOUT RIGHT   TOO MUCH
Comments: _____

Did you find any specific article especially useful?   YES   NO   If YES, list which one:

_____

Format and Layout

Is the format and layout easy to read and follow?   YES   NO   If NO, please explain:

_____

Which format of the magazine do you read?

COMMON GROUND (DOS)   COMMON GROUND (MAC)   SETEXT   ADOBE ACROBAT

Do the graphics enhance or clutter the magazine?   ENHANCE   CLUTTER
Comments: _____

Did you read the magazine online or did you print a copy?   online   PRINTED COPY
Comments: _____

Please describe ways in which the **Information Alley** could be improved, or give us your ideas on future articles.

_____

Personal Information (optional)

Please let us know who you are in case we have questions about your suggestions or comments.

Name _____   Telephone _____

Company _____   Email _____

Address _____

City _____   State _____   Country _____   Zip _____

Type of computer(s) _____

Primary software applications: _____